



Draft Technical Memorandum

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Prepared for: New York City Department of Environmental Protection (DEP)

Project Title: Gowanus Canal CSO Tank Siting and Superfund Support

Project No.: 145692

Technical Memorandum

Subject: RH-034 Construction Staging Analysis

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Limitations:

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1.1 Purpose and Objective

During the siting investigation for the CSO facility near the RH-034 CSO outfall, NYCDEP also considered potential construction staging and sequencing options associated with each of the short listed sites. The DEP's main objective is to minimize the impacts that the project would have on the surrounding neighborhood and streets. This memo summarizes the analyses conducted during evaluation of construction staging considerations.

1.2 Background

During construction of the Gowanus facilities, the staging area will be used for different purposes throughout the duration of the project. Initially the staging area will support the excavation activities by providing an off-street area to fill (and potentially stage) trucks that haul away the excavated material. As excavation ends and the construction begins, the staging area will initially be used for staging the concrete pouring activities, including off-street concrete mixer staging, pouring/offloading activities, as well as locating the concrete pumping equipment needed to create the foundation and key structural elements of the facility. Later, during the construction of the superstructure, the staging area will be used to store and pre-assemble structural steel and masonry elements prior to installation on the growing structure. Finally the staging area will be used to stage/assemble key mechanical equipment prior to installation in the facility. Throughout all these activities, the staging area will also be used to locate construction trailers that house key administrative functions during construction.

1.3 RH-034 Construction Staging Considerations

While there are a few potential parcels of sufficient size in the surrounding neighborhood near the RH3 site to locate the construction staging area, many are not in the immediate vicinity of the RH3 construction site or are currently vacant. Parcels that are available (for sale) are either too small or are located a distance from the RH3 construction site. Analyses conducted during the Siting Study determined that the best approach to staging the construction of the Red Hook facility would be to utilize one centralized construction site with available staging areas contained within the site. Establishing a staging area integrated into the construction site has many benefits over a staging area that is remote to the construction site. Several of the key benefits are included in the bulleted list below:

- Reduces the impact from potential truck traffic and parking throughout the neighborhood during excavation. Excavation for the tank will produce a large quantity of excess soil that cannot be stock-piled within the construction site and must be hauled away by truck for disposal. Trucks would be able to drive into the integrated staging area/construction site to be loaded, rather than queuing on City streets.
- Provides staging area for truck washdown during the loading and haul off of excavated material. This reduces the potential for inadvertently spreading contaminated excavate and nuisance dust throughout the neighborhood during transportation. It also provides for reliable monitoring of all potentially contaminated excavate as it is hauled off-site.



- The ability to stage and fill trucks adjacent to the excavation will save time, enabling the project to remain on schedule. The footprint for the tank is approximately 52,000 ft² and would require the excavation of approximately 172,000 yd³ of material (150,000 yd³ for the tank and an additional 22,000 yd³ for the conveyance infrastructure). To meet the anticipated construction schedule, this would require removal of 1,000 yd³ of excavate per day for six months. This roughly equates to five 20 yd³ dump trucks entering/exiting the site each hour during a 10 hour work day. If insufficient space is provided for staging, fewer trucks can be loaded per hour which will slow progress and could cause schedule slippage.
- Available space for materials lay-down and staging immediately adjacent to the construction site, rather than a staging site elsewhere in the neighborhood. This will avoid the additional truck and heavy equipment traffic required to move equipment between the remote staging area and the construction site, creating a safer environment in the streets throughout the neighborhood and particularly around the Thomas Greene Park and pool. Further, the reduction in truck and heavy equipment movement throughout the neighborhood enables for the maintenance of street traffic during peak travel times.
- Reduces the City's exposure to claims of damage/disturbances by contractor's equipment, material, or personnel. Centralizing the staging area and construction site minimizes interaction of construction personnel and equipment with the affected Community.
- Ability to contain the construction and construction related activities to one contiguous site. This will enable Nevins Street to remain open to traffic and provides a buffer between the construction site and the Thomas Greene Park and pool.
- Consolidates nuisance control activities (e.g. dust control, odor and emissions, noise mitigation, and rodent control) as well as site security to a single, contiguous site, rather than at multiple sites across the neighborhood. In addition to the public benefits associated with consolidation of these issues, management of a single site is overall more effectively and ultimately less costly to City of New York.
- The contiguous staging parcel creates more space to work in and around during construction resulting in an overall safer environment, reducing the potential for serious injury to construction workers. It also enables more efficient and thus cost effective construction inspection, including all Environmental Health and Safety Aspects and monitoring of all materials and equipment presently stored on site during construction.
- Centralizes all temporary utilities required for the construction work (power, water, gas, communications, etc.) reducing costs for multiple staging areas throughout the neighborhood.
- The reduction of truck and equipment traffic in the neighborhood reduces engine emission which is more environmentally friendly and consistent with EPA's Clean and Green Policy that applies to remediation sites.



- More efficient construction and staging which reduces the potential for delays during construction due to a disruption in the supply chain needed to transfer material from an off-site location to the construction site. The time it takes to retrieve materials from the remote staging area and bring to the construction site, compounded over the entire duration of the project, creates substantial inefficiencies.
- Sufficient space for locating construction trailers which provides immediate access to the site for construction supervisors, engineers, and site safety professionals.
- A staging area next to the canal also provides the potential to deliver material to the site using the Canal, assuming dredging activities progress to the point where this is feasible, rather than city streets. A staging area upland from the canal eliminates this option.

Selection of a construction staging area that is across the street or blocks away from the RH3 construction site does not provide the same benefits or protections to the community as a staging area that is integrated with the construction site. Some of the more significant impacts of a staging area that is remote to the construction site include:

- Truck staging for excavation and construction would take place in the street around the construction site, impacting traffic flow on the streets around the park and construction site.
- Removal of contaminated excavated material could not be contained to the site, nor would there be sufficient space for truck wash down during later phases when the excavated area for the tank consumes most of the RH3 construction site. This creates the potential for spill-over and distribution of contaminated sediment throughout the neighborhood.
- Equipment and construction materials would need to be transferred from the remote staging area to the construction site which will increase truck and vehicle traffic on the streets around the RH3 construction site, including the movement of heavy construction equipment around the Thomas Greene Park and Pool. This increases the risk of injury to pedestrians and park-goers while also adversely impacting the park experience for neighborhood residents.

In addition to these safety issues, the construction process will be less efficient when compared to a construction site with an integrated staging area – especially for site excavation. As noted above, the required rate of excavation is significant in order to meet the project schedule. Relying on a less efficient site layout could result in lower excavation productivity; result in schedule delays for the overall project.



1.4 RH-034 Recommended Construction Staging Site

As illustrated in Figure 1, the preferred staging area for the RH3 site is the parcel at 270 Nevins Street (Block 425, Lot 1). This site would provide approximately 51,750 square feet of space for construction trailers and material lay-down area, adjacent to the RH3 site. The need for a staging area is very important as the footprint analysis determined that a tank would take up much of the two parcels that comprise the RH3 site, leaving little room to actually construct the facility.



Figure 1. Location of construction staging area adjacent to the RH3 site

Given the proximity of the proposed staging area to the parcels that comprise the RH3 site and the fact Degraw Street dead ends at the Gowanus Canal, it would be feasible to close Degraw Street between Nevins Street and the Canal, creating a contiguous site with the proposed construction area while minimizing traffic impacts due to street closings.

1.5 Summary

There are significant benefits to the City of New York and the residents around the Gowanus by locating the staging area on the parcel adjacent to RH3. A contiguous, centralized site provides an overall safer environment for both the workers and the surrounding neighborhood, reduces the potential for schedule delays, and consolidates management of the construction site to a single area, removed from the park and neighborhood. For these reasons, the City desires to use this site for construction staging over other potential parcels in the neighborhood near the RH3 construction site.